IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

application of:

Michael A. Gallu et al.

Serial No.: 10/723,897

Filed: November 26, 2003

Group Art Unit: 2125

Examiner: J. Gandhi

For: **METHOD AND SYSTEM FOR AUTOMATICALLY ISOLATING SUSPECT ITEMS IN A MANUFACTURING OR ASSEMBLY ENVIRONMENT**

Attorney Docket No.: 81078764 / FMC 1646 PUS

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an Appeal Brief from the final rejection of claims 1-20 made in the Office Action mailed on August 12, 2005 for the above-identified patent application. The Applicants filed a Notice of Appeal on November 10, 2005.

I. **REAL PARTY IN INTEREST**

The real party in interest is Ford Motor Company, a corporation organized and existing under the laws of the state of Delaware, and having a place of business at The American Road, Dearborn, Michigan 48121, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on March 18, 2004 at Reel 14427/Frame 223.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF CLAIMS

Claims 1-20 are pending in this application. These claims have been rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendment after final rejection was filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Two independent claims are involved in this appeal, claims 1 and 13. Claim 1 recites a computer-implemented method for automatically isolating suspect items in a manufacturing environment. Claim 13 recites a computer system for doing so.

Claim 1 recited four steps. The first step involves receiving one or more "suspect item definitions" into a computer database. (Pages 13 - 19 with reference to Figure 4.) While not recited in claim 1, "suspect items" may include defective parts, recall items, mis-build items, etc. (Page 1.)

The second step includes automatically detecting an "item identifier" for an item that is progressing through an assembly or manufacturing process. (Pages 5 and 6 with reference to Figures 2 and 5.) Next, the item identifier is compared against the database of suspect item definitions to determine whether the particular item is suspect. (Pages 5 and 6 with reference to Figures 2 and 5.)   If so, the item is automatically isolated in the manufacturing or assemble process. (Page 7 with reference to Figure 3.)

The computer system recited in independent claim 13 is configured to implement the steps recited in independent claim 1.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-20(all pending claims) stand rejected under 35 U.S.C. § 103(a) as being anticipated by U.S. Patent No. 5,596,712 to Tsuyama.

VII. <u>ARGUMENT</u>

Tsuyama is not related to the Applicants' invention, and does not teach or suggest all elements of the independent claims. Accordingly, the Applicants respectfully traverse the Examiner's rejection of all independent claims as anticipated by Tsuyama.

Tsuyama is directed to analyzing faults in a product, not analyzing products to determine which may be faulty, as the claims on appeal recite. In Tsuyama, a fault tree for a product is created based on past faults. The fault tree includes "weighting coefficients." These "weighting coefficients" are used to determine the cause of "new faults" that are not already stored in the fault tree. The system also outputs information concerning an adjustment of, or repair to, the product based on the determined cause of the fault. Information relating to the timing of the fault, the cause of the fault and the repair may be stored in a database.

The Abstract succinctly summarizes Tsuyama.

A computer-implemented method and system for diagnosing and system for diagnosing and analyzing fault information of a product is carried out by (a) creating a fault tree representing causal relations between faults and causes thereof base on information of past faults and information concerning the structure and characteristics of the product, and storing the fault tree in a storage unit, the fault tree having branches allocated with weighting coefficients; (b) inputting new fault information of the product into the computer; (c) searching the fault tree in accordance with the weighting coefficients based on the fault information stored in the storage unit to thereby determine the cause of the fault; (d) generating and outputting information concerning an adjustment or repair of the product suffering from the fault based on the determined cause of the fault as well as the information concerning the structure and the characteristics of the product; (e) supplying information concerning the timing of the occurrence of the fault, symptoms appearing in the fault, the cause of the fault and the adjustment and repair data to a host computer through a data collecting station to thereby construct a database for the fault information; and (f) the quality of the product based on all or a part of information of the database.

The Applicants' invention, on the other hand, recites a method for automatically isolating suspect items in a manufacturing environment — not identifying faults within a particular product using a fault tree as Tsuyama teaches. Accordingly, Tsuyama does not disclose at least the following elements of independent claims 1 and 13:

- automatically detecting an identifier for an item in a manufacturing or assembly process;

- comparing the detected item identifier with the one or more suspect item definitions; and

- if the detected item identifier falls within one or more of the suspect item definitions, automatically isolating the item in the manufacturing or assembly process.

As explained above, Tsuyama does not bear any relation to defining, detecting and isolating suspect items during manufacturing or assembly. On the contrary, Tsuyama expressly teaches that its fault estimating system is to be implemented *after* manufacturing is completed:

> FIG. 1 shows a general arrangement of a system to which the present invention is applied. A product planned by a marketing department is developed and designed to subsequently undergo a reliability evaluation, whereon a production schedule is established. The finished products as manufactured are then shipped for sales after inspection. When a fault occurs in the product put into operation by a customer, information is sent to a service department which is responsible for the repair.

(Col. 6, lines 30 – 42.)

Similarly, Tsuyama discloses that "when a fault occurs in a machine or apparatus being used by a customer, the cause of the fault can be pinpointed by searching for the fault tree on the basis of the symptom . . . ." (Col. 3, lines 36-39) Customers contact a product maintenance department manually to report the existence of a fault in their product:

> Upon occurrence of a fault, a telephone message of the fault occurrence is sent from the customer to a maintenance service department. In the course of transactions through the telephone,

> the maintenance service department gets information concerning the name and model or type of the product of concern, symptoms of the fault, the time and the conditions at and under which the fault has taken place and others. In the maintenance service department, the information obtained from the customer is inputted to the work station to thereby cause a diagnosis procedure to be started.

(Col 7, lines 27-37.)

Thus, Tsuyama does not teach automatically detecting an "item identifier" for an item in a manufacturing or assembly process, comparing the item identifier with "suspect item definitions," and automatically isolating suspect items in the manufacturing or assembly process, as each independent claim recites.

The pending dependent claims (2-12 and 14-20) recite a litany of features that are also not taught or suggested by Tsuyama, including:

- displaying a location for the suspect items in the manufacturing or assembly process (claims 2 and 14)

- automatically removing suspect items from the manufacturing or assembly process (claims 4 and 16)

- automatically modifying the manufacturing or assembly process to avoid suspect manufacturing or assembly operations (claims 5 and 17)

In rejecting the dependent claims, the Examiner provided no analysis whatsoever. He merely recited the Summary of the Invention of Tsuyama, but without any comparison to the dependent claims, and without any analysis of how the quoted language would teach or suggest the dependent claims to one of ordinary skill in the art at the time of the Applicants' invention. Such omnibus rejections are improper — an element-by-element comparison is required. MPEP 707.07, 2131.

For the forgoing reasons, the Applicants respectfully request that the final rejection be vacated. The fee of $500 as applicable under the provisions of 37 C.F.R.

§ 41.20(b)(2), as well as any additional fees or credits, should be applied to Deposit Account 06-1510 (Ford Global Technologies, Inc.). A duplicate of this page is enclosed for this purpose.

Respectfully submitted,

MICHAEL A. GALLU ET AL.

By: _____
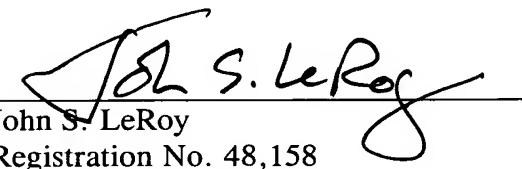
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Enclosure - Appendices

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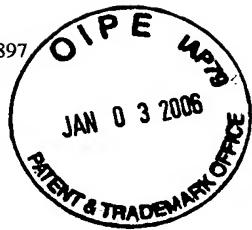
VIII. CLAIMS APPENDIX

1.   A computer-implemented method for automatically isolating suspect items in a manufacturing environment, the method comprising:

inputting one or more suspect item definitions into a computer database;

automatically detecting an identifier for an item in a manufacturing or assembly process;

comparing the detected item identifier with the one or more suspect item definitions; and

if the detected item identifier falls within one or more of the suspect item definitions, automatically isolating the item in the manufacturing or assembly process.

2.   The method of claim 1 additionally comprising displaying a location for the item.

3.   The method of claim 2 wherein the location for the item is inferred.

4.   The method of claim 1 wherein the step of isolating the item comprises physically removing the item from the manufacturing or assembly process.

5.   The method of claim 1 additionally comprising automatically modifying the manufacturing or assembly process to bypass one or more suspect manufacturing or assembly operations.

6.   The method of claim 1 wherein the suspect item definition includes one or more item serial numbers.

7.   The method of claim 1 wherein the suspect item definition includes a manufacturing or assembly operation.

8.   The method of claim 1 wherein the suspect item definition includes a time or date range.

9.   The method of claim 1 wherein the suspect item definition includes an adapter plate identifier.

10.   The method of claim 1 wherein the suspect item definition includes a sub-component identifier.

11.   The method of claim 1 additionally comprising communicating one or more suspect item definitions to a remote location outside of the manufacturing or assembly process.

12.   The method of claim 11 wherein the remote location is a remote manufacturing or assembly plant.

13.   A computer system for automatically isolating suspect items in a manufacturing environment, the system comprising one or more computers operably programmed and configured to:

receive information including one or more suspect item definitions into a computer database;

receive information including an identifier for an item in a manufacturing or assembly process;

comparing the item identifier with the one or more suspect item definitions;

if the detected item identifier falls within one or more of the suspect item definitions, output a signal to a manufacturing or assembly station whereat the item is automatically isolated from manufacturing or assembly process.

14.   The system of claim 13 wherein the one or more computers are additionally programmed and configured to display a location for the item.

15.   The system of claim 13 wherein the one or more computers are additionally programmed and configured to infer the location of the item.

16.   The system of claim 13 wherein the item is physically removed from the manufacturing or assembly process.

17.   The system of claim 13 wherein the one or more computers are additionally programmed and configured to modify the manufacturing or assembly process to bypass one or more suspect manufacturing or assembly operations.

18.   The system of claim 13 wherein the one or more computers are additionally programmed and configured to support a graphical user interface for inputting suspect item definitions.

19.   The system of claim 13 wherein the one or more computers are additionally programmed and configured to support a graphical user interface for displaying the location of one or more suspect items falling within a suspect item definition.

20.   The system of claim 13 wherein the one or more computers are additionally programmed and configured to communicate one or more suspect item definitions to a remote computer located outside of the manufacturing or assembly process.

IX. EVIDENCE APPENDIX

None

X. <u>RELATED PROCEEDINGS APPENDIX</u>

None